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Original Communications.

THE VERDICT OF SCIENCE CONCERNING THE EFFECTS OF ALCOHOL ON MAN.

BY N. S. DAVIS, M.D.

Read to the National Temperance Convention, June 2d, 1875.

ALCOHOLIC liquids, as derived from the fermentation of various fruits and vegetable substances, have been known and used from an early period in the history of our race. Being derived from the grape or fruit of the vine chiefly, the name vinum, or wine, was naturally applied to all these liquids, until some time in the seventh century, when a liquid obtained from the fermentation of corn began to be called beer by the Saxons.

During the prevalence of the Alchemists' or Arabian school of chemistry, in the eleventh century, the vinous liquids in use began to be subjected to distillation, by which the active intoxicating constituent was obtained in a concentrated form, to which was applied the name "spirit of wine," and afterwards the word "alcohol." This last word appears to have been first used by the Arabians to designate an impalpable cosmetic powder used by the women of that day. It was afterwards applied to various subtle powders, and finally to spirit of wine. The first really scientific use of the term "alcohol" with which we are acquainted was by Lemert in his chemistry, published in 1698. For a long period after the discovery of spirit of wine or alcohol, it was used only as a solvent or menstruum in the preparation and preservation of other substances, while the fermented liquids continued to be used as drinks. The impure and diluted alcohols derived from distillation of fermented liquids, known as brandy, gin, rum, and whisky, are of modern origin, having been introduced into use within the

last two or three centuries. Although we have a large variety of beverages derived from fermentation and distillation, known as wines, beers, and distilled spirits, yet ethylic, or absolute ether, universally known under the name of alcohol, constitutes the active, controlling ingredient in them all. The amount of this alcohol in the fermented drinks, called wines, beers, ales, etc., varies from four to twenty per cent.; while in the distilled spirits, called brandy, whisky, rum and gin, it constitutes from fifty to seventy-five per cent. Separate the alcohol from all these liquids, and the remainder would be capable of producing very little more effect on the human system than pure water. The juniper in gin, the hop in beer, and the vegetable acids and fecula in wines, are in quantities too small to exert any important influence, and hence may be omitted from our further consideration.

When we speak of alcohol, therefore, or of the effects of alcohol, throughout the remainder of this paper, we mean to include all alcoholic liquids, whether fermented or distilled. Until analytical and organic chemistry had made sufficient progress to show the composition of the more common articles of food and drink, no efforts were made to explain the special or physiological action of alcohol on the human system. All liquids containing it, were simply regarded as cordial or stimulant, and capable of supporting strength and life. When the chemico-physiological school of investigators, with Baron Liebig at its head, developed the fact that all alimentary substances were capable of being arranged into two classes, the nitrogenous and carbonaceous, they very naturally adopted the theoretical idea that the former when taken into the system were appropriated to the nourishment of the tissues, while the latter united with oxygen by a species of combustion, resulting in the development of animal heat and carbonic acid gas, and hence were familiarly styled "respiratory food."

Alcohol, being one of the purest of the carbonaceous class, and especially rich in carbon and hydrogen, was at once assigned a place at the head of the list of respiratory foods, and of supporters of animal heat. When taken into the living system, it was supposed to unite rapidly with the oxygen received through the lungs, evolving heat, and leaving as resultants carbonic acid gas and water; in this way its supposed heating and stimulating effects were explained.

The simplicity of the explanation, coupled with the high authority of Liebig, caused it to be almost universally accepted, although resting on a purely theoretical basis, without a single experimental fact for its support. It was not long, however, before Dr. Prout, of London, ascertained by direct experiment, that the presence of alcohol in the human system directly diminished the amount of carbonic acid gas exhaled from the lungs, and consequently there could be no combustion or oxydation of the alcohol by which it was converted into carbonic acid and water. Dr. Percy and others, by examination, found that alcohol taken in a dilute form into the stomach, was taken up without change of composition, and carried with the blood into all the organs and structures of the body; and that its presence could be easily

detected by the proper chemical tests. The chemico-physiologists, however, still assuming that alcohol, being a hydro-carbon, must necessarily be used for maintaining temperature and respiration, suggested that the union of its elements with oxygen might be such as to result in forming acetic acid or aldehyde instead of carbonic acid gas. Hence they still sustained the popular belief that alcoholic drinks were capable of increasing both the temperature and strength of the human body. In the meantime, the process of experimentation went on. Dr. Boker, of Germany, by a well-devised and carefully-executed series of experiments, proved that the presence of alcohol in the living system, actually diminished the sum total of eliminations of effete matter daily; and consequently, that its presence must retard those molecular changes by which nutrition, secretion, and elimination are effected. In 1850, the writer of this paper prosecuted an extensive series of experiments to determine the effects of different articles of food and drink on the temperature of the body, and on the amount of carbonic acid excreted from the lungs. These experiments proved conclusively that, during the active period of digestion after taking any ordinary food, whether nitrogenous or carbonaceous, the temperature of the body is always increased; but after taking alcohol in the form of either fermented or distilled drinks, the temperature begins to fall within half an hour, and continues to decrease for from two to three hours. The extent and duration of the reduction of temperature was in direct proportion to the amount of alcohol taken. The results of this series of experiments were embodied in a paper read to the American Medical Association in May, 1851. [See *Northwestern Medical and Surgical Journal* for 1851.] A few years later, the experimental researches of Lallemand, Perrin and Duroy, proved conclusively that alcohol, when taken into the stomach, was not only absorbed and carried with the blood into all the organs and tissues of the body, but also that it was eliminated as alcohol, unchanged chemically, from the lungs, skin, and kidneys. The experiments of Prout were repeated, and his results confirmed by Sandras and Bouchardet, of France; W. A. Hammond, myself, and others of this country. Those of Boker were carefully repeated and varied by Anstie, of England, and Hammond, of this country. My own in reference to the effects of alcohol on animal heat have been repeated, and the results confirmed by a large number of observers, among whom are Drs. Richardson, Anstie, and Hammond. Those of Lallemand, in reference to the elimination of alcohol, have been equally confirmed, except the claim that the amount eliminated is not equal to the whole quantity taken. Hence the following propositions may be stated as fully established scientific facts:

First.—That alcohol, when taken diluted in the form of fermented or distilled spirits, is rapidly absorbed without change, carried into the blood, and with that fluid brought in contact with every structure and part of the human body.

Second.—That, while circulating in the blood, its presence retards those molecular or atomic changes by which nutrition, disintegration, and secre-

tion are maintained, and the phenomena of life continued.

Third.—That its presence retards the elimination of waste matter, impairs nerve sensibility, lessens muscular excitability, and lowers the temperature of the body.

Fourth.—That a part, at least, of the amount taken is finally eliminated or thrown out of the system with the excretions, without having undergone any appreciable chemical change.

These facts are as well established as any in the domain of physiology, or in the whole field of natural science, and they point with all the clearness and force of a mathematical demonstration to the conclusion, that alcohol is in no sense food; neither furnishing material for the tissues, nor fuel for combustion, nor yet generating either nervous or muscular force. Having thus determined, experimentally, that alcohol is neither food nor a generator of force in the living body, the question recurs, What are its positive effects when taken in the ordinary manner? I answer, simply those of an anæsthetic and organic sedative. Like ether and chloroform, its presence diminishes the sensibility of the nervous system and brain, thereby rendering the individual less conscious of all outward and exterior impressions. This diminution of sensibility, or anæsthesia, is developed in direct ratio to the quantity of alcohol taken, and may be seen in all stages from simple exemption from all feeling of fatigue, pain, and idea of weight, exhibited by ease, buoyancy, hilarity, etc., to that of complete unconsciousness, and loss of muscular power. It is this anæsthetic effect of alcohol that has led to all the popular errors and contradictory uses, which have proved so destructive to human health and happiness. It has long been one of the noted paradoxes of human action, that the same individual would resort to the same alcoholic drink to warm him in winter, protect him from the heat in summer, to strengthen when weak or weary, and to soothe and cheer when afflicted in body or mind. With the facts now before us, the explanation of all this is apparent. The alcohol does not relieve the individual from cold by increasing his temperature; nor from heat by cooling him; nor from weakness and exhaustion by nourishing his tissues; nor yet from affliction by increasing nerve power; but simply by diminishing the sensibility of his nerve structure, and thereby lessening his consciousness of impressions, whether from cold, or heat, or weariness, or pain. In other words, the presence of the alcohol has not in any degree lessened the effects of the evils to which he is exposed, but has diminished his consciousness of their existence, and thereby impaired his judgment concerning the degree of their action upon him.

It is this property of alcohol to produce that sense of ease, buoyancy, and exhilaration, arising from a moderate diminution of nerve sensibility, that gives it the fascinating and delusive power over the human race, which it has wielded so ruinously for centuries gone by. But while the presence of alcohol diminishes the sensibility of the nervous structure, it also retards all the molecular changes, thereby diminishing the activity of nutrition, secretion, elimination, and the evolution of heat, constituting a true organic sedative. When taken

in small quantities, repeated daily, the individual usually slowly increases in weight, not from increased nutrition, but from retarding the waste and retaining the old atoms longer in the tissues. By some investigators, this power to retard atomic changes and consequently to retain the old atoms, has been regarded as equivalent to nutrition, or the actual assimilation and addition of new atoms. It is on this basis that Dr. Hammond and a few others persist in representing alcohol as indirect food. The fallacy of such claim, and its mischievous tendency, will be fully apparent by reference to one of the plainest laws governing living animal matter. The law is, that all the phenomena of animal life are associated with and dependent on atomic changes, and that each individual cell or aggregation of bioplasm constituting an organic atom, has its determinate period of growth, maturity, and dissolution. Hence, to introduce into the living system any agent that will retard atomic change, is equivalent to retarding the phenomena of life. And if by retarding the atomic changes, cells or atoms are retained in the tissues longer than the natural duration of their activity, such retention may increase the bulk and weight, but in the same ratio it embarrasses the tissues with the presence of material which is constantly becoming inert and tending to degeneration. Consequently, the individual who thus increases his bulk and weight by taking just enough of the weaker alcoholic drinks daily to retard the processes of secretion and waste, in the same proportion diminishes his activity, his power of endurance, and his ability to resist the effects of morbid agents of every kind. This is abundantly illustrated by the thousands of beer and wine drinkers, who from twenty to twenty-five years of age, were muscular, active, capable of any reasonable endurance, with a weight of 150 pounds, but who, after moderately retarding atomic changes and retaining old atoms by the daily use of wine or beer, have acquired a weight of 200 pounds or more, and have lost their muscular activity and endurance to such an extent that an active exercise of twenty minutes would make them puff like a "heavy horse." It is this sedative effect of alcohol on the organic or molecular changes in the tissues, retaining waste and effete matter that ought to have been promptly disintegrated and thrown out, which impairs the vital properties, and predisposes or prepares the system to yield to morbid influences of any kind to which it may be exposed. And especially does this sedative effect of alcohol on the organic changes, when maintained by a moderate and continued use of the article, favor those degenerative changes, which result in tubercular, caseous, and fatty deposits in the lungs, liver, kidneys, heart, and arteries of the brain, and in materially shortening the duration of life. It is the same interference with the processes of nutrition and waste, only exerted more actively, that causes gastritis and delirium tremens in the excessive drinker of distilled spirits. If you ask for the special modus operandi of alcohol, how it produces its anæsthetic and sedative effect when taken into the human system, I answer, chiefly by its strong affinity for water and albumen. The two last named substances exist in the

blood and all the tissues of the body, and for them alcohol has a strong chemical affinity. Hence, when it is present in the blood, it attracts the water from the blood corpuscles, causing them to become more or less corrugated, and inclined to adhere to one another as described by Dr. Richardson, of London, and diminishing the capacity of the blood to absorb oxygen or other gases from the air in the lungs; and by its strong affinity for the albumen of the tissues, it retards the play of vital affinity between that substance and the other materials with which it is in contact, thereby retarding the molecular changes as already described. The paralyzing effect exerted on the vaso-motor as well as cerebro-spinal nervous structures by which sensibility is impaired, is owing partly to the direct anæsthetic properties of the alcohol, and partly to the diminished interchange of oxygen for carbonic acid gas in the process of respiration. That a part of the alcohol should be retained for a considerable length of time in the system by the affinities just mentioned, is very probable. Hence the late Dr. Anstie may have been correct in claiming that it was not all eliminated from the system within any limited period of time, and yet its retention would afford no proof that it was either appropriated as food or for the generation of force.

On the contrary, the catalytic influence of its presence retards both. If we scan the whole domain of physiology and pathology in connection with the logical deductions from the experimental researches by parties widely separated by time, space, nationality, and language, we shall be forced to the conclusion that alcohol as found in any or all of the fermented and distilled drinks, is neither stimulating, strengthening, nor nourishing to the human system, but simply anæsthetic and sedative. Consequently, it cannot be used in health without injurious effects proportioned to the quantity used and the frequency of its repetition. Its applicability as a remedy in the treatment of disease is extremely limited; so much so that it might be wholly dispensed with, without any injury to the sick, every intelligent physician being able to supply its place with other remedies of equal, if not greater, value in the limited number of cases in which it is applicable. Such we regard as the just and legitimate verdict of true science, regarding the effects of alcoholic drinks on man. We might amplify this paper by the citation of additional authorities and illustrative facts, until it would fill a volume; but we have thought it more profitable and better fitting the present occasion, to limit it to a concise and plain statement of the present state of knowledge on this important subject.

DR. WILLIAM H. MIXON records (*American Practitioner*) a case in which, having no other instrument at hand, he tapped the bladder above the pubes with a bistoury. The patient made a good recovery.

DR. GEORGE H. BIXBY, of Boston, Mass., respectfully solicits from those members of the profession who have performed ovariotomy, their experience in regard to pregnancy occurring after that operation.

Translations.

CLINICAL THERMOMETRY.

FROM THE "COMPENDIUM DER NEUEREN MEDICINISCHEN WISSENSCHAFTEN," BY DR. B. KRAUS.

Condensed and translated by Dr. H. Gradle.

IN small-pox, either variola vera or a complication must be diagnosed, if the temperature remains febrile after the appearance of the eruption. In idiopathic croupous and lobar pneumonia the observation of a normal temperature at a certain time is not absolute evidence of the completion of the morbid process. A *very* high rise of the mercury denotes a great intensity or extension of the inflammation. Facial erysipelas threatens to extend further, and complications are to be feared as long as the temperature remains febrile in that affection. In bronchitis and influenza, a *highly* febrile condition shows involvement of the capillary bronchial tubes, or commencement of a pneumonitis; it occurs also in caseous degeneration of the exudation. Pertussis is always complicated when the temperature is abnormal. In acute rheumatism the height of the mercury is an index of the danger and probability of complications.

In meningeal and cerebral disorders the thermometer is of less diagnostic value. Wunderlich thinks that involvement of the convexity of the hemispheres is accompanied by a higher temperature than basilar meningitis, in which latter the normal heat may not be exceeded. As is well known, the pulse indicates by its acceleration an irritated condition of the brain; by its slackening a compression of the same, but the exact seat of the disorder is not thus revealed. The same seems to be the case with the thermometric evidence.

Inflammations of serous membranes increase in danger according to the height of the temperature, yet a moderate fever does not always warrant a favorable prognosis.

Repeated observation of a high temperature, with the co-existence of gastro-intestinal catarrh, indicates the occurrence of severe disease, as typhoid, etc.

Wunderlich doubts the existence of intermittent fever, if at the beginning of the hot stage the mercury reaches the vicinity of 41° C. (106° F.) or exceeds 41.8° C. (107.25° F.); but if the apyrexia is imperfect, the disease is again questionable. If, after the attacks have ceased, the temperature undergoes still abnormal exacerbations, the disease is not cured. In severe cases of this disease, especially in feeble and irritable individuals, the decline of the temperature towards the close may fall much below the normal limits, and be accompanied—or not—by other symptoms of collapse, without, however, indicating danger, if this collapse corresponds to the period of defervescence.

TEMPERATURE DURING CONVALESCENCE.

During convalescence the body may possess its normal degree of heat, but after the occurrence of severe, especially wasting, diseases, the temperature is usually below the normal degree; sometimes it is higher. Accordingly convalescence has been designated normal or irregular. A high temperature is generally owing to imperfect convalescence, while collapse, if considerable, is also not without danger, and points often to internal hæmorrhage, intestinal perforation, etc. Yet a temperature but slightly less than normal is not a dangerous sign, merely indicating that nutrition does not yet correspond to the demands of the system.

During convalescence the temperature possesses still an abnormal instability, hence a sudden febrile rise is not very rare. This may be due to errors in diet, too early partaking solid food, or spirits, or an excessive meal, or too great exertion from early rising, etc. Often a rise occurs immediately on leaving the bed. Constipation and other unimportant circumstances, are also of marked influence on the temperature. Yet the cause of the rise of temperature may also be a serious disorder, revealing itself at the time merely by that symptom, hence an unexpected result of a single thermometric observation should always receive due consideration.

TEMPERATURE AFTER DEATH.

After death the temperature shows some interesting alterations; in most cases it falls the more rapidly the lower the animal heat at the moment of death. Alvarenga details the thermometric course in the case of a man aged 58 years, who entered the clinic with cerebral apoplexy, and died of the same after the lapse of fourteen hours. The thermometer showed, one hour before death, 36.5° C., and one quarter of an hour after death, 35.6° C. Hereupon, retaining the instrument in the axilla, the following numbers were read off, record being taken every *fifteen minutes:* 35.6, 35.4, 35.0, 34.6. 34.0, 33.4, 32.8, 32.2, 31.6, 31.0, 30.6, 30.0, 29.6, 29.0, 28.4, 27.0, 25.6, 23.8, 20.6, 18.0, 15.8, 15, stationary.

Occasionally the temperature rises *post-mortem*, surpassing even the maximum during life. Jaccoud (*Traite de la path. interne*, T. 1) mentions that when a slight rise occurs, of but a few tenths degree, it takes place about an hour after death, whereupon, after the temperature has remained stationary for a short time, it begins to fall, at first slowly and thereupon more rapidly; if, however, the *post-mortem* rise has been considerable, the decline is much slower to occur, as in tetanus, cholera, and other febrile disorders, attended with an increase up to the last moment. The cause of the rise of temperature has been sought in (1) the suspension of respiration and cutaneous secretion, sources of loss of heat; (2) the uninterrupted continuance of the chemical processes, the means of production of heat, and (3) the *post-mortem* changes in muscular tissue, considered also a source of heat.

THE COURSE OF PATHOLOGICAL TEMPERATURE.

The normal diurnal oscillations of temperature become vastly more considerable in disease, so as to amount usually to 1–1½°C., and even 5–6° difference between the daily minimal and maximal temperature. The extent of

the diurnal oscillations depends on the nature, intensity, and stage of the disease, the complications and accidents, the favorable or fatal tendency of the affection, as well as on individual circumstances and therapeutic measures. The particular thermometric course of a disease is often sufficiently distinct to serve as means of diagnosis of that disorder.

The temperature either remains abnormally elevated *constantly*, until the acme is passed, giving the type of a continuous fever, or it returns at periods to its normal height, to describe thereafter a similar curve—intermittent fevers. In the latter class, each period of pyrexia can be considered as a special course of fever, a repetition of which is to be expected until the disease is cured.

The thermometric course of a disease consists of different stages characterized by a special thermometric curve of their own, sometimes abruptly, more often gradually, passing into each other. The *pyrogenetic* or initial stage, differs according to whether the fever is dependent on a local disease or not, and whether it precedes or follows the latter. In the former case the fever begins abruptly and reaches a high grade before the local disturbances are manifest; in such cases the initial stage is said to be completed, when the lowest mean temperature of the day characteristic of that disease is attained, or when the local symptoms begin to appear. In fevers without localization the first stage is not distinct, and the limits between it and the second are arbitrary.

The variations of disease, as regards their initial stage, are classified by Wunderlich under three heads: *a.* Diseases with short pyrogenetic stage, the temperature describing an almost straight, oblique line. *b.* Affections with initial stage of several days' duration, the temperature usually rising in the evening and sinking again in the morning, at which time it may be even normal. Occasionally this stage is interrupted by continuous apyrexia. *c.* Diseases with still more gradual development, generally irregular and not distinctly typical in their course.

Differences in temperature during the height of disease, the second stage, may occur as regards the absolute maximum, dependent on the nature and intensity of the affection, but too much weight ought not to be placed on this, unless of such a height as to threaten life by itself, since a temporary high temperature may result from various extraneous influences. Of more importance are the differences in the diurnal average during the acme, the mean of which for the entire period is still more characteristic. But the most valuable basis for decision in any case is the entire thermometric course during the acme. This may be ascending to a point at which either death occurs, or a rapid decline commences, or it may remain stationary at a certain height, undergoing merely slight diurnal oscillations of about $\frac{1}{2}^{\circ}$, or finally be irregular. This second stage may terminate abruptly, or gradually pass into another period. It is often followed, especially in favorable cases passing through a severe course, by a period of unsteadiness of temperature.

The thermometric course during the process of repair is divided by Wunderlich into the following periods: *a.* The stage of decided but insufficient decline; *b.* defervescence;

c. the period following defervescence, and *d*, convalescence. The stage of decline is not present in all cases; occasionally it commences with a short precursory *rise* of temperature. The period of defervescence is the most distinct stage in different diseases, and deviations from its typical course are good evidence of anomalies or imperfect repair. The course of defervescence constitutes either *crisis*, in which the temperature falls 2–5° C., or more, within thirty-six hours at the latest, reaching the normal height, or even sinking beyond it; or it is termed *lysis* when the decline is much more gradual. In this mode of defervescence the temperature shows a greater decline from evening to the next morning than from the latter period to the consecutive evening, during which time it may remain stationary or even rise slightly. In this way the period may be protracted two to four days, or even one week, as we see in scarlatina, in typhus, occasionally in pneumonitis of long duration; rarely does this occur in typhoid fever, oftener in catarrhal fevers. The course of lysis may also be remittent, considerable morning remissions alternating with high evening exacerbations while on the whole the daily average and maximum steadily decreases.

A consecutive disease begins to show its influence on the temperature after the latter has passed through the usual course to convalescence, provided it is of a febrile nature.

The fatal issue is preceded by thermometric phenomena, which, in some cases might be interpreted as apparent improvement; in others, however, as of decided unfavorable prognostic evidence; and but rarely do we succeed in such cases in avoiding the fatal issue by powerful interference. This stage, preceding the moribund state, differs in its thermometric course from both the ordinary course of the disease and the true agony. According to Wunderlich, the following varieties of this stage may occur:

a. The ascending form, in which, with the exception, perhaps, of slight morning remissions, the temperature rises steadily until the occurrence of agony or death itself. Its beginning is more or less distinct, according to the height of the fever existing previously.

b. The descending form, much more frequent, in which the decline of temperature might be taken as a favorable sign if it were not for the concomitant symptoms, especially the enormous rise in the frequency of the pulse. This stage is mostly of short duration, from one-half to two days, the temperature sinking only about 1° C., though sometimes reaching the normal height. Not unfrequently the temperature begins to rise again in the following stage of agony.

c. In some cases this stage is indicated only by other symptoms, for instance, the pulse, and not at all by any thermometric change, especially when cyanosis is present, though, in the latter case, the descending form is the more common.

d. The last variety is characterized by great oscillations of temperature, high exacerbations alternating with very low remissions, as is the case in pyæmic disorder, and desperate affections which have been treated very energetically.

[*To be continued.*]

Editorial Department.

THE STUDY OF ÆTIOLOGY.

TO facilitate the study of ætiology, more especially in relation to acute endemic and epidemic diseases, we need much more exact knowledge in regard to the date of *commencement* of all cases occurring in a given number of places through a series of years.

Our mortuary statistics, showing the time and number of deaths in a given locality, do not supply the facts we need, for the well-known reason that death does not generally occur until several days and often weeks have elapsed after the disease began. Hence atmospheric conditions, that may have been potent in the production of an attack, may have ceased or become materially changed before the date of death. It is well known that systematic and detailed records of all important atmospheric conditions are now kept in localities representing all sections of our country, under the direction of the Signal Service Bureau of the General Government. And measures are being taken to render these records still more complete by adding observations on the electric and ozonic conditions of the atmosphere. If we could now secure the co-operation of a number of physicians engaged in active practice at their Signal Service Stations who would make it a duty to ascertain as exactly as possible the date of the first active symptoms of all acute cases of disease coming under their observation, entering the same in their pocket memorandums daily, and at the end of each month tabulate them on a sheet of paper properly ruled for that purpose, we would soon be able to determine whether there was any coincidence between certain atmospheric conditions and the development of certain diseases, by comparing the tables of sickness with those embodying the meteorological records in the same locality.

Initiatory steps were taken for securing such records by the Section on Practical Medicine of the American Medical Association at the meeting in Detroit, in 1874. The subject was further presented in a report to the same Section of the Association this year in Louisville, and a committee appointed to prosecute the work. We hope such practitioners as may be applied to for co-operation with the committee will cordially render their aid, and that each one will take all the necessary care to ascertain by careful inquiry as near the exact date of the initial symptoms in each case as is possible. The committee consists of Drs. N. S. Davis, and H. A. Johnson, of Chicago, and J. B. Johnson, of St. Louis.

ÆSCULAPIAN SOCIETY OF THE WABASH VALLEY.—This Society held a regular and interesting meeting in Terre Haute, Indiana, on the 26th and 27th ults.

PRIZE ESSAY—MEDICAL ASSOCIATION OF THE STATE OF ALABAMA.—At the Annual Session of this Association, held at Montgomery during the second week in April, 1875, Dr. S. D. Seelye, of Montgomery, after some remarks regarding the increasing frequency with which cases of Bright's Disease are brought under medical care in this section, the unsatisfactory though extensive literature of the subject, and the generally fatal prognosis which we are obliged to give, rendering it one of the opprobria of the profession; and believing that there is still some hidden light that may be made to illumine the subject if attention and inquiry are turned especially to it, proposed to place in the hands of this Association a prize of one hundred dollars for the best treatise on this disease. The proposition having been accepted by this Association, it now invites from the thinkers and investigators of the profession at large, the generous competition which its author invokes.

BENJ. H. RIGGS, M.D.,
Sec. M. A. S. A., Selma, Ala.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.—A centennial number. The *Boston Medical and Surgical Journal* for June 17th, will be largely devoted to historical matters of special professional interest. Among the attractive features will be the following: 1, A copper-plate portrait of Gen. Joseph Warren, M.D., with quotations from his medical day book; 2, An original Sonnet by Dr. Oliver Wendell Holmes; 3, A Paper by Dr. George B. Loring, on the Medical Profession of Massachusetts at the time of the Revolution; 4, A Paper by Dr. J. M. Toner, of Washington, D. C., on the Medical Department of the Continental Army; 5, A Translation of a Hessian Surgeon's Notes of some of his American experiences; 6, Reminiscences of a Tory Surgeon's Part in the Battle of Bunker Hill; 7, A Letter from Charleston, S. C., upon Historical Subjects. Price 15 cents. H. O. Houghton and Company.

AMERICAN MEDICAL ASSOCIATION.—By request of many members, the Secretary will shortly issue a pamphlet edition of the MINUTES of the late session. All who desire copies, will please remit *fifty cents* at once, to

WM. B. ATKINSON,
Perm't Sec'y,
1,400 Pine Street, Phila.

HEALTH OF DENVER.—Dr. F. G. Bancroft, city physician of Denver, Colorado, claims, in his annual report, the exceptionally favorable death-rate of 13 in 1,000 for that city. Of consumption he says:

I must say of the large number of consumptives who come to Colorado in all of the different varieties and stages of the disease, with the hope of an immediate and permanent cure, that the greater portion eventually die; yet I am fully of the opinion that the climate of Colorado gives to the invalid in the early stages better chances of either a complete restoration to health or a prolonged and happy life, than any other portion of the Union. Even in hopeless cases, our clear, dry, exhilarating air gives buoyancy to the spirits, that carries the patient to his final hour with less physical and mental suffering than could occur in damp and gloomy climates.—*Phil. Med. Rep.*

Correspondence.

A LETTER FROM PARIS.

EDITORS MEDICAL EXAMINER: As the result of the last concours of agregation in medicine, MM. Dieulafoy, Grancher, Lionville, Lepine, and Legroux have become agreges of the Faculty of Paris, and MM. Grasset and Balestre of the Faculty of Montpellier. The term agrege conveys the meaning of "fellow," or, as used with us, might, perhaps, be better translated as assistant professor. From the agreges are elected the professors, as vacancies occur in the Faculty.

The road to this position is by no means an easy one to travel, and this system of competitive examinations is one that the profession in France is justly proud of. The concours is open to any graduate of the French school who has reached the age of twenty-five years. For the nine vacancies of this last concours there were twenty candidates.

The first trial was an essay upon Anatomy and General Physiology, and the subject given was "On the Lymphatic System." This had to be treated without notes or aid of books for reference, and each candidate read his essay before the committee of the Faculty, in the large amphitheatre of the school, which of course was open to the public.

The second examination consisted in a lecture of three-quarters of an hour on some given medical question, three hours being granted for preparation, but without aid of books or notes. The jury then having examined the printed works of each candidate, the opening trial was finished and two of the competitors were eliminated.

Then commenced the final trials (*epreuves definatives*). The first was a public lecture of an hour, on a subject of general pathology given by the jury twenty-four hours previously. The second consisted in a public clinical lecture on some case, designated by the jury, in the hospital wards (Hotel Dieu or Pitie), after fifteen minutes' examination by the candidate. The third and last trial was the writing of a thesis (subject given by the jury), which had to be *printed* in regulation form seventeen days after the subject was announced.

From this summary of the requirements of the concours of agregation, it will be seen that it is no easy matter to acquire the title of agrege, and that there is no "royal" road to that position. Although the concours was opened in December, the theses were not finished until April. As all the examinations were public, they were followed very closely, not only by the students but by the graduates of the school, for there is always an interest felt in these contests by the profession at large, and there are few things connected with the school in which the French take more pride than in these struggles for position. There is

no chance for favoritism in the examinations, as their publicity forbids any underhand work. One curious part of the concours is the "quizzing" of one candidate by the others. It is upon the thesis. The candidate seats himself in the "pulpit" of the large amphitheatre, thesis in hand; while, seated at a table in front of him, are the members of the jury, attired in their red silk gowns and hats, and two of the competitors, likewise supplied with copies of the thesis. The latter successively ply the "man in the pulpit" with questions on the subject of his thesis, trying to break down any theory that he may have advanced, or to catch him upon some point that he may not have considered. The one who questions is incited, perhaps, by the thought that he soon will undergo the same process, or, indeed, he may be smarting under the remembrance of questions that were given to embarrass him in the presence of eight or nine hundred auditors. With that characteristic French style, the questioner generally commences with a few remarks upon the pleasure he has had in reading the essay before him, and congratulates the author upon its merit, and then he suddenly launches out upon some hidden question that does not always betray the amount of good feeling one would expect after his prorogation. The author of the thesis commences his reply by thanking the other for his congratulations, perhaps expressing himself as highly honored by such a compliment from so distinguished a confrere, and then replies to the questions asked, referring, it may be, to another page of his thesis where the answer may be found, or, perhaps, giving some new references to prove his position. Thus it goes on, and the jury and public sit and listen, generally amused at the contest that is going on before them. One can judge that under these circumstances a man's ability has a clear chance of making itself evident, although there is in such trials, perhaps, a tendency to the cultivation of egotism, which may in some measure account for peculiarities of to-day.

The report of M. Chauffard, president of the jury, to the Minister of Public Instruction, mentions this concours as the most satisfactory that has been held for many years, and pays high compliments to those who were not elected as well as to the successful ones. The subjects for the theses are chosen by the Faculty with reference to those questions that are considered as needing more research, and we find the pathology of the nervous system occupying a prominent position among the subjects given. Five subjects were on questions of special and general therapeutics. This last choice was not amiss, for therapeutics are not too closely investigated here. Even the writer in the half-official *Gazette des Hopitaux* admits this, for in this connection we find the following rather pointed inquiry: "Does the Faculty commence to understand that therapeutics is the feeble side of its teaching, and that, without losing anything for the future in its useful instruction on pathological anatomy and pathogeny, it is time to direct its studies a little toward that which is the object and goal of all medical researches?" This is rather a broad hint, but unfortunately embodies too much truth in indicating a very weak point in French medical training. To forget the patient in studying his disease

is, to speak mildly, rather an awkward thing for the patient.

Dr. Siredey has published an article in the March and April numbers of the *Annales de Gynecologie*, which is entitled: "Puerperal Fever does not Exist." He holds that under the name of puerperal fever are confounded many different diseases, each having a proper train of symptoms, a special course, and a variable prognosis, and that among them it is possible to make a differential diagnosis. The numerous and varied opinions that are held upon this question he ascribes to the variety of lesions that have been found upon *post-mortem* examination. For some persons the metritis embodies the principal lesion, while for others a peritonitis, phlebitis, or lymphangitis has the preference. The essentialists object that the disease cannot be named from any of the lesions, as these vary with the case, with the epidemic, or indeed may be altogether wanting. Dr. Siredey contests this last view that there may be no lesion, and holds that the autopsies were not made with sufficient care, and are too few to be of value. In support of this opinion he mentions several cases in which, though at first nothing abnormal was found, a more careful examination demonstrated the presence of pus. From the vast number of cases examined where lesions were found, and from the few and doubtful records to the contrary, he deems it just to admit that the fever is not essential. Nevertheless, the name "puerperal fever" is preserved, and the various lesions in different parts of the body are considered as only secondary manifestations of this one disease. It matters little whether the action turns itself upon the uterus, the peritoneum, the veins, or the lymphatics; for the upholders of this idea, it is sufficient to know the ætiological conditions of the disease to be sure of its nature. So constituted, puerperal fever has been accepted by the most eminent. Depaul, P. Dubois, and Danyau, in the discussion of 1858, defended it. Trousseau, at first doubting, finally admitted it, not only in women, but in infants, and, indeed, in wounded men, provided they were placed near an obstetrical service! In spite of his respect for such eminent authorities, Dr. Siredey believes that in retaining the name "puerperal fever" we only perpetuate an error, and obscure a question that it is of the highest importance to clear up. In fevers we find certain lesions that are constant. For example, in typhoid fever there is the ulceration of Peyer's patches, in scarlet fever the serous membranes are attacked, and the mucous in measles. For the different lesions that are found after death from the disease called puerperal fever, Dr. Siredey thinks he is able to point out a series of symptoms that will show that several distinct diseases have been confounded heretofore, and that a differential diagnosis can be made among them. After mentioning the peritonitis, with its typhoid state and fetid diarrhœa and lochia, he treats of the really difficult, and for many impossible, diagnosis between phlebitis and lymphangitis. He commences by endeavoring to show that many times the lesions considered to be in the veins were in the lymphatics of the uterus. The principal trunks of the lymphatics occupy the angles and sides of the uterus, and sometimes they acquire a volume of 5, 6,

or 8 millimetres, equaling that of the veins, and hence liable to be confounded with them. The large circular vessel, situated at the juncture of the neck and body of the uterus, which is so often found filled with pus, is not a vein, but a lymphatic. Dr. Siredey thinks that many mistakes have been made from these anatomical peculiarities, and considers that inflammation of the lymphatics is the more common. Noting the very intimate connection of the lymphatics with the peritoneum, and the frequent occurrence of peritonitis in the fever of child-bed, he argues that the so-called puerperal fever is generally but a lymphangitis. The differential diagnosis between this disease and phlebitis he places as follows: Chill—In the lymphangitis it is unique, and only appears at the commencement of the disease, while in phlebitis it is multiple, and not only is found at the beginning but at all periods of the disease. The chill of the lymphangitis appears in general from the first to the fifth day after the labor, while in an inflammation of the veins it occurs but rarely before the sixth day, and frequently much later. The temperature reaches a high figure (40° to 41° C.) in the lymphangitis, but remains at this level, varying only by some tenths of a degree. In the phlebitis the temperature rises progressively, reaching its maximum during the febrile paroxysm; then falls to rise again, presenting between the remissions and exacerbations a difference of several degrees. The pain is more intense in the abdomen for the lymphangitis, which may be accounted for by the peritonitis. The phlebitis does not give rise to intense abdominal symptoms, but reveals its existence by varied lesions that testify to the invasion of the economy by pyæmia. The course of disease is much more rapid in the lymphangitis. Death occurs generally eight or ten days after the labor, and in rare cases, in two or three days, while the phlebitis may extend from two to three weeks. Dr. Siredey admits that lesions of both diseases are found in some cases, but states that the symptoms show the first period belongs to the lymphangitis, while the second period is that of phlebitis. He illustrates his argument by giving in detail the history of four cases.

During the past two weeks the Paris journals, medical and secular, have been very much occupied with the voyage of the balloon Zenith. Messrs. Croce-Spinelli, Sivel and Tissandier made the ascent on the 15th of April, and gained the height of 8,600 metres, but unfortunately the two former died during their exposure in this rarefied atmosphere, and Tissandier alone remained to tell of their experience. The ballon was equipped with all the inventions that science has shown to be of use in such voyages, and each person was provided with a bag of oxygen by means of which he could supply himself with that gas when the quantity in the air should become too limited. However, these precautions seem to have been of but little service. Tissandier states that at twenty minutes after one o'clock (two hours after they left the earth) he saw the needle of the barometer pass 280 millimetres, and he tried to say "We are at 8,000 metres," but was unable to speak. The balloon then descended a short distance, but soon mounted again, and all three lost consciousness. When Tissandier came to himself, he found

the balloon falling with frightful velocity and his two companions dead. Self-registering tubes had been placed in the balloon to note the atmospheric pressure, and, though the majority of them were broken, two indicated that the maximum height reached must have been 8,600 metres. The question that greatly interests the scientific world is concerning the cause of the death of Croce-Spinelli and Sivel. Experiments have frequently been made in Paris by means of an air-tight chamber, in which the pressure of the atmosphere can be reduced as desired. Under these couditions, M. Bert has been able, by inhaling oxygen, to support a diminution corresponding to an ascent of 8,900 metres. But unfortunately the conditions of the experiment and of an ascent have not been placed on exactly the same level. The subject is at present under consideration at the Academy of Medicine, but the opinion, as found in the medical journals, seems to be that the death was the result of an asphyxia from privation of oxygen, with the added influence of excessive cold; and, secondary to this, to pulmonary lesions such as accompany the asphyxia from carbonic acid. It is thought that the voyagers were not sufficiently careful in supplying themselves with the oxygen, or that the rapidity of the ascent prevented them from using the gas. One result of this balloon trip is an outcry against researches in such high regions, and the Academy finds itself called upon to discourage any future attempts by not offering inducements for the venture. Of course the wide-spread interest in this fatal attempt has incited all those with a "ballooning" turn of mind, and already we hear of new ascents that are to take place.

It is generally admitted that Paris leads the world for fashion, and I doubt not there is a great deal of truth in such an assertion. More particularly was I convinced of this when I heard the following *fashionable* indication for the early use of the forceps: When a public singer is brought to the pangs of child-bed, one must use the forceps as soon as possible, lest the continued screaming of the woman should injure her voice. C. C. M.

PARIS, May 3d, 1875.

CHLORAL IN TETANUS. — In the treatment of traumatic tetanus by chloral, Dr. Gontier reaches the following conclusions: Chloral may render great service in the treatment of chronic or subacute tetanus, and is especially preferable to other drugs. It is completely inefficacious in acute tetanus, and only has a slight palliative action. It may be advantageously associated with tonics, diffusible stimulants, and diaphoretics. Intravenous injections of chloral are extremely dangerous, and should, in the present state of science, be reserved for exceptional cases only. — *Phil. Med. Reporter.*

THE DURATION OF LIFE.—The following facts on the duration of life appear in the *Deutsche Versicherungs Zeitung:*

"In ancient Rome, during the period between the years 200 and 300 A. D., the average duration of life among the upper classes was 30 years. In the present century, among the same classes of people, it amounts to 50 years. In the sixteenth century the mean duration of life in Geneva was 21.21 years; between 1814 and 1833 it was 40.68 years; and at the present time as many people live to 70 years of age as 300 years ago lived to the age of 43."—*Ibid.*

Gleanings from Our Exchanges.

A CASE OF UNILATERAL SWEATING OF THE HEAD.

BY ALONZO BRYAN, M.D.

From the Clinic, June 5, 1875.

AS every phenomenon that may perchance be of value in the investigation of the nervous system, is at present of great importance, I am glad to present for publication the account of a case of unilateral sweating of the head, having had the case for some time under observation. Only a few such cases have been observed, and it appears not with the care which their rareness would seem to demand. Dr. Bartholow, I believe, has reported several instances of the affection to the New York Neurological Society.

June 27, 1874.—Mrs. M. J. C. has unilateral sweating of the head. Today I saw her when the temperature of the room was 92° Fah. The parts of the head and face to the right of the median line were sweating freely. The parts to the left were ordinarily moist, as is the skin during a state of common insensible perspiration. The temperature of the right and left temples differed to the extent of 1¼° Fah. under the following circumstances: A good medical thermometer was pressed upon the left temple a little back of the external angle of the eye (by applying over the bulb of the instrument, for the purpose of excluding the atmosphere, very thick folds of woollen flannel) and the temperature was found to be 98½° F. At the corresponding spot on the opposite or sweating side, the temperature was 97¼°. When the bulb was not covered in by flannel, in the still atmosphere, the relative difference of temperature was the same. The temperature at the bend of each elbow, with the arm flexed so as to cover in the bulb of the thermometer, was on each side alike, 99½° (the person had been taking active exercise). Within the mouth, on both sides, the temperature was uniform, exactly 100°. The touch, sensibility, and motility, were uniform and perfect. The two radial pulses were alike; when the patient was sitting against the back of a common chair, 88 pulsations in the minute. The sudoriferous glands only, were more active on the one side. The sweating extended very slightly to the left of the median line of the mouth and chin, but the median line of the forehead and nose was an exact line of demarcation. The difference of sweating did not extend below the head and face.

Only two pathological states could be ascertained to exist: unilateral neuralgia of the face and head, and psoriasis; the latter occurring in spots on the head and extremities. Contrary to what I had expected, the neuralgia was on the right side; *i. e.*, the sweating side. This latter point, to my surprise, I recently ascertained. I presume that in this case the functions of the affected sympathetic filaments are rather exalted instead of being depressed. It should be observed though that the transudation of perspiration seemed to be held in abeyance on the side unaffected with neuralgia. On the neuralgic side the degree of perspiration seemed to be that which ought normally to have been excited by the temperature to which the person was subject at the time of the examination.

The psoriasis may have been due to nervous influence also.

It may be observed in this case that only one vital action seemed to

be interfered with: the transudation of perspiration. Touch, sensibility, and motility, were uniform and perfect upon the two sides. The special senses were perfect. The chemical and organic changes in the tissues did not seem to be retarded or hastened, as the temperature within the mouth was the same on either side, 100°. The difference of temperature of the two sides, externally, was doubtless owing to the difference of the cutaneous evaporation.

A NOVEL TREATMENT OF OBSTINATE VOMITING IN PREGNANCY.

By Edward Copeman, M.D., F. R. C. P.

From the British Medical Journal, May 15, 1875.

DURING a long professional life, I have had much experience of this troublesome affection, and amongst medicines have found calumba and oxalate of cerium the most beneficial; but these and all other medicines often fail, and the treatment suggested by the following cases, discovered by accident as it were, and never, as far as I know (although nothing is new under the sun), employed before, promises some chance of our being able with more certainty to overcome this very threatening concomitant of pregnancy.

On June 9th, 1874, I was summoned to a lady, thirty-five years of age or thereabouts, to consult with two other practitioners already in attendance. She was about six months gone in pregnancy, and was so reduced by almost incessant vomiting, that great fears were entertained as to her safety. I noticed there was slight uterine action accompanying the sickness, and on examination, I found the os uteri partially dilated so as readily to admit the finger. I thought it right under the emergency to advise bringing on labor without delay; the gentlemen present, however, expressed no little apprehension as to whether or not she would have strength to undergo the effort of parturition on account of the very depressed and exhausted state of her system. They nevertheless concurred in the advisability of the course I recommended, and asked me to perform the operation. I at once dilated the os uteri as much as I could with the finger, and could feel the membranes and the head of the child. I tried to rupture the membranes with a teloscopic female catheter (the only instrument at hand), but they were so flaccid and the head offered so little resistance, the catheter shortening itself also on my making pressure, that I could not succeed; and, thinking it wise to wait awhile before resorting to any other expedient, we retired to another room for further consultation. In about one hour, we saw the patient again, and were surprised to find that a longer period had elapsed without sickness than before; and we again waited, in the hope that she might be able to take a little nourishment, and so be better prepared to undergo any further proceeding. We waited another hour, and another, but there was no return of vomiting; and we spent the rest of the night in watching, during the whole of which time she was improving, and we determined to let well alone. I left her early in the morning, and had a favorable account of her a few days afterwards. There was no return of sickness; she went on to the full period of pregnancy, was then delivered of a healthy child, and made a good recovery.

Two other cases are given, where a similar manipulation resulted in prompt and entire relief.

Book Reviews.

REST IN NERVOUS DISEASE — ITS USE AND ABUSE. By S. Weir Mitchell, M.D. 20 pp. Price, 30c.

This is No. 4 of the series of American Clinical Lectures now being issued in monthly parts by G. P. Putnam's Sons.

A few extracts will show the tenor of the essay:

"Rest and unrest," the author says, "have had their days and fashions in medicine; but be you sure that he who can tell when the one is wanted, and when the other, is a man who is a master in the ways of healing. Surgeons and doctors for a long while have been using rest as one means of curing disease. Not by any means all of them have distinct views as to what it is they do when they put at rest a limb or the whole body; and yet this is what we most want to know. Unhappily, we lack as yet some of the factors needed to work out this hard equation; and until these are given we must in part only guess at the physiological results of rest, for to-day no man can tell me fully what is the difference in the products of the life of a limb at positive rest and in active motion. In fact, most that we know on this matter is purely empirical, and is in the shape of coarse clinical results. Still, even these teach certain things which you will do well to bear in mind. First of all is the thought, which should be ever with us, that few medical means are without their evil side. In our efforts to help, we too often harm, and we must take prudent care always that in causing the largest share of good we give rise to the least amount of ill. The one goes with the other as surely as shadow with light. To no medical measure does this caution more apply than to the use of rest.

"When you put patients in bed, and forbid them to rise or to make use of their muscles, you at once lessen appetite, weaken, in many cases, digestion, constipate the bowels, and enfeeble circulation. To say how all this arises, would need not a lecture, but a book, and I can only hint at what I might call headings for thought. Defect of circulation is the main business to think about. A man in bed has his heart-beats brought down in number and also in force. Then there is for him no longer the constant momentary pumping out of blood from active muscles, and these aids to the heart failing, the distant local circulations suffer, and the blood flows around the muscles and not through them, and the skin ceases to be flushed by exercise and becomes pale and shrunken. To be small one moment and large the next is a condition of health for the vessels, and this fails for the want of exercise, so that when a man lies in bed the muscles lose tone, and when he gets up of a sudden this is seen in the way the blood column enlarges the lower vessels, and, leaving the head, causes faintness. Of these well-known facts I remind you only that you may the more fully see why I dwell so much on the means which must be used with rest in order to take from its avoidable evils.

"Think, then, when you put a person in bed that you are lessening the heart-beats some twenty a minute, nearly a third; that you are making the tardy blood to linger in the by-ways of the blood-round, for it has its by-ways; that rest prone, binds the bowels, and tends to destroy the desire to eat; and that muscles in rest too long get to be unhealthy and shrunken in substance. Bear these ills in mind, and be ready to meet them, and you will have answered the hard question of how to help by rest without hurt to the patient.

"But what is it that rest does for your sick man? We have seen, in brief, how it hurts; how does it help? When first I came to ask myself this question, I found that though in many cases I was sure of its usefulness, I was by no means sure why it gave rise to such helpful results; nor am I now much better off in this matter, as concerns some of the diseases in which I am most secure of aid from it."

Rest in neuralgias is first considered, and a variety of cases given.

"I once treated a case of infra-maxillary neural pain by rest. I forbade laughing and talking, and gave only fluid food. These means made less the number of fits of pain, which were usually about fifty a day. On the first day of rest they became thirty-three, and in four days came down to eleven, but these were very bad, as if with lessening the number we had made greater the pain. I found in this case that rest only helped but did not cure, nor is it ever much more than an aid to other means. Could we have put a stop to swallowing, no doubt we should have done still better, for the more she swallowed the worse grew the pain. Motion of the part, then, increases nerve pain, and motion or active function of parts far from it may do the same. No one can yet say why this is as regards the fifth nerve. The motions we speak of do not all of them mechanically disturb the nerve. In many cases they cannot. No doubt there are close relations in the sensorium between the centres which get impressions of all kinds from face, and throat, and mouth, and stomach, and when one little centre becomes irritable from disease, or the steady acting of an outside cause of disorder, like a pinched nerve, it soon begins to feel morbidly, through other ganglia, the normal impressions which every functional act brings to them, and through them to it.

"Now this is not an explanation; it is only a way of stating the facts, but it is a way which perhaps may aid you to see them in a clearer light. Suppress, by rest, the number of normal excitations which reach the over-sensitive nerve cells, and you suppress some of the causes of pain, because an excitable centre feels all things as pain, and grows more and more sensitive, like a man in anger whose wrath is fed by everything.

"The use of these facts gets to be plainer in neuralgias of the limbs. Some of you will recall a case of neuralgia from a wound of the median nerve-branches in the hand, which you saw last year. The irritations lasted long, and were so constant that the whole of the sensory centres belonging to the arm got at last to be distressingly alive to outside impressions, so that the faint messages sent to the brain from the motions of distant muscles in the forearm and arm were all felt in the centres as pain.

"It has long been my practice to

insist that patients in the early stages of spinal congestion, meningitis, and chronic myelitis, especially in the very well localized forms the latter disease may assume, should lie down whenever they are indoors. If I can carry my point, I like very much to put these cases in bed, and at perfect rest for a few weeks, and my reasons for doing so are these: Erect posture, and walking heavily, tax the spinal ganglia, and never more so than when every step is labor. The prone position puts them at rest. It is easiest to repair when the machine is not in full action, and so rest is to be wished for in a disordered spine. Besides which I could tell you case on case of these troubles, in which some sudden fatigue has brought about an abrupt increase in the gravity of the disease, while I have never seen ill come of rest, even though it caused no gain.

"In cases of chronic meningitis, such as I have seen come of injury, or from the downward passage of cerebral meningitis, after sunstroke, rest, with counter-irritants, is almost the only very good means; rest, long and complete, is the one utmost want. Nor need I say much as to the treatment by pure rest of the meningo-myelitis of Pott's disease, in which you have all seen the most perfect success in this house from the use of the prone position without the classical treatment by the hot iron, which is certainly sometimes useful, but in many cases needless, despite Charcot's recent and most authoritative statement.

"I come last in my hasty review to a class of cases in which the use of rest is entirely my own idea, and in which I am sure I have gotten results of great value — results which happily you have seen with me in this very hospital. I allude to the use of rest in locomotor ataxia, in its early stages of pain chiefly and most surely, but also in any case of posterior sclerosis before it has gone too far. You will ask me what I mean by this phrase, "gone too far;" and I answer that it is vague, because I really am, as yet, unable to set the limit beyond which rest is useless. I have seen it strangely relieve old cases of ataxia in which there was pain, and with the relief of pain there was also unhoped-for relief of other symptoms.

"I have tried in this lecture to make clear my views as to the evil and the good of rest, but I have failed to satisfy myself if I have not set in strong light the fact that the ills which go with this useful means of treatment are capable of being met and dealt with to the good service of cases of disease. Rest can be made to help. Rest also can hurt, and he who deals with it as a means of cure must not fail to bear in mind the modes by which we can secure the light without the shadow, the good without the harm."

ANALYSIS OF ONE THOUSAND CASES OF SKIN DISEASE, WITH CASES AND REMARKS ON TREATMENT. By L. Duncan Bulkley, A.M., M.D.

This is a reprint from the *American Practitioner* for May, 1875. It contains many valuable suggestions, especially in regard to treatment. We quote the following fragments from different parts of the essay:

"All the diseases noted are arranged under forty-three heads, and several of these again include a number of

different forms usually recognized as separate diseases; thus acne has six varieties; eczema includes much that might be called by some impetigo and lichen; tinea includes the tinea circinata and tonsurans, or ring-worm of the body and head; also favus, parasitic sycosis, and so on.

"Considerably more than one-half of all the patients were females—five hundred and seventy-four to four hundred and twenty-four males, an excess of one hundred and fifty or fifteen per cent. of females—and in two cases the sex was not stated. But little can be learned, however, from this, as the females are more at leisure to come during the dispensary hours, and many of the diseases are more annoying to this sex than to men. But a comparatively small proportion were children, except in the case of eczema, where about one-sixth of the entire number were five years of age or under. The number of cases is too small to draw any conclusions as to the season of the year in which various diseases are wont to appear, nor can any deductions be made as to the effect of occupation in producing disease, except in certain instances. It is, however, certain to my mind, that a very large share of cases are the direct result of filth, neglect of hygienic rules, and of poor and improper food. * As an instance of the effect of filth, I would cite the one hundred and forty-one cases due to animal and vegetable parasites, one-seventh of the whole number analyzed; of the neglect of hygienic considerations, the ninety-eight cases of syphilitic eruptions, or one-tenth of the whole; and of dietary errors, the one hundred and seventy-seven cases of acne, erythema, and urticaria, or one-sixth of the whole; together with the direct effect of dietary errors in causing outbreaks of eczema, furuncles, pruritus, lichen, etc.

"The diseases are further commented upon in the order of their frequency, *eczema* coming first in the list, from its frequency as well as its very great importance; and in all the statistics published it has always outnumbered any other form of cutaneous disease many-fold (with the single exception, I believe, of McCall Anderson's hospital statistics,* where scabies equals eczema in frequency), the proportion being always about the same; namely, one-third of all cases.

"It appears from these statistics that the greatest predisposition to eczema is during the first year of life, when eighteen cases were observed; and during the first five years fifty-six cases, or more than one-sixth of the whole, occurred; the next five years, five to ten, giving but twenty, or a total of seventy-six for the first decade. Wilson's statistics give but twenty-nine for the first thousand and forty-one for the second during this first decade, showing that the lower station in life has much to do in rendering the very earlier years subject to eczema. Again, the thirty years from the ages of thirty to sixty gave with Wilson one hundred and sixty-two patients with eczema in each thousand against one hundred and sixteen in our statistics. Now this period between thirty and sixty we know to be that most liable to gouty trouble, and it is quite probable that the indolent and sedative life with over-indulgence of the rich has much to do in making eczema more com-

* *Diseases of the Skin—Analysis of Eleven Thousand Cases.* London, 1872.

mon during middle life in the higher walks of English society than among the lower classes in America.

"Quite a proportion of these cases were in the young, as before stated; eighteen of the patients occurring in the first year of life, fifty-six in all being five years or under. Eczema at this period requires very careful and judicious treatment. Each case almost will require a different course; and it is well to remember that it is the *patient* which is to be treated, and not the disease. I do not order poultices to remove the crusts of infantile eczema as many do, preferring much to cause their separation by means of fatty matter. Among the poor, and sometimes among the rich, I have the head soaked in cod-liver oil (sweet-almond oil answers), or I have an ointment applied at once in a tolerably soft form; directing that the head shall not be washed at all, but as fast as the crusts fall, perhaps with slight assistance from the finger-nail, the ointment is to be re-applied; the idea being to thoroughly protect the irritated mucous layer of the skin, and to shield it from air and water. Occasionally the crusts will accumulate and adhere, and it becomes necessary to use a poultice or wash the head well with warm water and borax; but this, in my experience, is very rare.

"During the past year, I have employed very largely, tannin in ointment (one drachm to one ounce) in eczema, and like it very well. A very common treatment is to bathe first with the *liquor picis alkalinus*, diluted ten or twelve times, twice a day, and apply the tannin ointment immediately afterward. I have also used with very satisfactory results the subnitrate of bismuth in ointment (half a drachm to one ounce), and prefer it in very many instances to that of zinc, as commonly employed. I would again mention the value of the rose ointment, as an excipient, and its efficiency when the simple ointment has failed. Several cases of eczema rubrum covering quite a large part of the body of children one or two years old were seen. These cases are often most obstinate. Our best results were attained by starch and alkaline baths, and powdering the surface with subnitrate of bismuth and starch.

"Internal treatment is always required, and I believe that the largest percentage of good results was obtained by means of cod-liver oil in appropriate doses. Syrup of the iodide of iron is also invaluable in treating eczema in children.

"In adults, most of the cases of eczema were of the chronic form, very many of them being in the legs, and dependent upon varicose veins. The treatment of these is very frequently unsatisfactory, because of the continued existence of the cause, especially among the poor, who cannot give the necessary time to rest. Elastic stockings should be insisted on in eczema of the legs when the disease has recurred often or lasted long; for, although the veins may not appear to be varicose, there is often a want of tone of the capillaries, which is supplied by the stockings. We have had good results from the use of tarry preparations, and have known a moist eczema to be completely healed after a very few applications of the *liquor picis alkalinus* in full strength. A common treatment in chronic eczema is equal parts of tar and oxide

of zinc ointments, with the addition of a little mercurial ointment, as the citrine, when the surface ceases to be moist.

"In one case of eczema of the scrotum, I obtained very excellent results from the repeated application, by means of a camel's-hair brush, of the compound tincture of benzoin. The man ceased attending before the thickening had entirely disappeared, and the ultimate result cannot be stated with certainty; but it is probable that the disease was cured, as the remedy was the first one tried by me, and the relief and satisfaction expressed by the patient was very great.

"Quite a large share of the cases of ordinary eczema of various parts was treated by the oxide of zinc ointment, very generally in conjunction with some internal medication, depending upon the state of the patient. Many of this class are the constant subjects of dyspepsia, and the rhubarb and soda mixture was very commonly used. I frequently add Fowler's solution to it; giving of the latter three or four drops with a teaspoonful of the former. Many of these patients require tonics, and the ammonio-citrate of iron and compound tincture of cinchona were generally used. Acute lichenous eczema I frequently treated with Startin's mixture of sulphate of magnesia, sulphate of iron, aromatic sulphuric acid, and gentian. Acetate of potassa, alone or combined, was used somewhat, and in my hands has done much for eczema.

"2. *Acne.*—Acne appears second on our list in point of frequency, and we are quite willing to accord it that place so far as the annoyance to the patient (and ofttimes the physician) is concerned. Although acne belongs rather to those of luxurious habit, it is not an uncommon affection among the poor of this city, and especially those who lead indoor lives; hence it is that by far the larger number affected are females (although it is true that, it being more a matter of vanity and not a disease affecting the welfare of the patient, males pay less attention to it.)

"The acne simplex is decidedly a disease of adolescence. The youngest persons in whom it was observed were in two girls aged fourteen; two boys aged fifteen were recorded also with this form. During the five years, from fifteen to twenty, thirty-five cases of acne applied for treatment, and twenty-nine from twenty to twenty-five years of age; thus making the total number before twenty-five years of age sixty-six, and after this period but forty-five.

"It is not easy to make out the causes of disease among this class of patients, as the time given for treating them is very limited, and the notes made are often hurried. A large share of the cases, however, depended more or less directly upon the occupation, habits, and diet of the patient. Very many were directly associated with constipation and dyspepsia, as I have elsewhere shown,* and a few doubtless with uterine derangement, as many of the symptoms were often complained of; but no uterine examination is possible in this run of practice.

"Very many of the acne patients were benefited by the internal administration of acetate of potassa

* *American Practitioner*, December, 1872.

(fifteen grains, three times daily, well diluted) on an empty stomach; but the effect of this must be followed up by tonics. Arsenic, in my experience, is of but very little use in acne. I have during the past two or three years employed quite largely the plan of treatment suggested by Gubler, of Paris—namely, the internal use of glycerine, in doses of from one to three or four teaspoonfuls three times a day, after eating—and with good results. At first I colored and flavored it, but latterly I have given the citrate of iron and quinine in it, which effects both, and assists its tonic action. This plan is especially suited to those whose skins are greasy or muddy looking, with many comedones. I have had it fail repeatedly in the rosaceous form.

"Locally, most of my patients used hot water with good results, and I have prescribed more largely than any other, a lotion containing one drachm of washed sulphur, four drachms of sulphuric ether, and three and a half ounces of alcohol, and with very generally good effect. I have rarely employed the bichloride of mercury in washes, but sometimes the well-known wash of sulphur, camphor, and water.

"3. *Syphilodermata.*—It is a sad fact that third on our list as to frequency of occurrence, come the cutaneous lesions produced by syphilis; and sadder yet, that of the ninety-eight cases of this which were recorded, seventy occurred in females to twenty-eight males. Syphilis thus gave rise to nearly ten per cent. of all the cases of skin disease. This does not include the primary sores, they seldom, if ever, appearing in this class. This percentage is much greater than that given in most other statistics; thus in McCall Anderson's ten thousand dispensary patients, but a trifle over five per cent. of the diseases were of specific origin; at the London Hospital for diseases of the skin, only about five per cent.; at St. John's Hospital for diseases of the skin, only about three per cent.; at the Boston Dispensary for diseases of the skin, the proportion was about seven per cent.; and at the Philadelphia Dispensary, about eleven per cent.

"The majority of the cases were those of the later manifestations of syphilis, the earlier or macular eruption appearing more seldom. Thirty-one were recorded as having tubercular syphilis; many others noted as having merely tertiary symptoms.

"The treatment in most of my cases has been the bichloride of mercury (one thirty-second of a grain) with from seven to fifteen grains of iodide of potassium in mixture, with tonics, thrice daily. I have combined the carbonate of ammonia with the potassium in many cases, with rather better results than from the iodide alone. Inunction was but seldom used.

"4. *Phthiriasis and Scabies.*—Animal parasitic diseases also formed nearly one-tenth of the whole number of our cases. Of the ninety-three present, fifty-seven were due to the varieties of pediculus, or louse, and have the name *phthiriasis;* and thirty-six to the acarus scabei, forming *scabies*, or itch. These diseases, preventable by cleanliness, are, I am glad to say, very much less frequent here than in Scotland; for McCall Anderson states that scabies forms fully twenty-five per cent. or one-fourth of the whole

number of skin patients among the poor in Glasgow, and Milton over eighteen per cent. at the St. John's Hospital for diseases of the skin in London. It is to be hoped the proportion here will be even more lessened as intelligence and sanitary knowledge pervades the community.

"Our common method of treatment of the head-lice among the poor is, to soak the head well for twenty-four hours in kerosene oil, which destroys all the bugs and their nits; then wash the head well with soap and warm water, comb it out, and saturate it with cod-liver oil till all the sore places are healed. This treatment is very rapid and very sure, three or four days, or a week at most, serving to heal all excoriations. Or white precipitate or citrine ointment, diluted two or three times, applied from the first, will answer in many cases, and is perhaps the best in private practice. Its value is increased by having it highly scented with rosemary or some other volatile oil. For lice of the body we generally use a combination of one drachm of caustic potash and two drachms of carbolic acid in four ounces of water, using it diluted once or twice at first, directing also the clothing to be sprinkled with it. To make the cure of any of these forms permanent, the clothing must be either boiled or baked for a long time, also the bed linen, and often the bedding itself requires attention.

"5. *Psoriasis.*—The cases of psoriasis, fifty in number, were pretty evenly divided between the sexes, twenty-seven females to twenty-three males. The youngest patient was nine years of age, a boy; the oldest, seventy, also a male; and another case of a man aged sixty. Many of the cases were of great duration; one case is noted as having lasted twenty-four years in a woman aged thirty-nine; another eighteen years in a woman of thirty-seven; of course, with exacerbations and remissions; the case of the man aged seventy was recorded as psoriasis inveterata, but no duration is stated.

"Most of these patients were treated largely by local measures alone, because of the well-known obstinacy of the disease and the frequent neglect of treatment, whereby much that had been done would often be wasted. The preparations of tar, *liquor picis alkalinus*, or Hebra's compound tincture of green soap and oil of cade, were principally used, with diluted mercurial ointments. In many of the more recent cases, arsenic and alkalies were given, but no conclusions as to results can be drawn. I have obtained, however, very marked effects from the internal administration of tar and potash as combined in the *liquor picis alkalinus*, which we have so often presented to the profession * (picis liquidæ, ℥ ij; potassæ causticæ, ℥ j; aquæ, ℥ v.), giving from fifteen to thirty drops, largely diluted, on an empty stomach. It has the direct effect of diminishing the cutaneous congestion and lessening the scales. When long-continued it may disagree with the stomach, but it is a remedy of value when others fail. Three of the patients with psoriasis —two males, each aged forty, and one female, aged forty-four — had acne rosacea. No necessary connection between the two diseases is known. In none of the cases of psoriasis

* *Archives of Scientific and Practical Medicine*, February, 1873 (Brown-Sequard's).

which came under my observation, were the tongue or lips affected; all were examined, I believe. I mention this as some have intimated a connection between the lesion known as *psoriasis linguæ* and this disease."

ON SPASMODIC URETHRAL STRICTURE. By F. N. Otis, M.D., Clinical Professor of Genito-Urinary Diseases at the College of Physicians and Surgeons, New York. New York: G. P. Putnam's Sons, 1875.

This is a pamphlet reprinted from the *Archives of Dermatology*. The views of all the principal writers and authorities as to the nature and relative frequency of spasmodic urethral stricture are first reviewed and summed up as follows:

"In comparing the views of these recent accepted authorities, in regard to spasmodic urethral stricture, it will be observed that all agree as to its frequency, its transient character, and its easy management.

"Dittel met with a case where the pressure of the end of a catheter for fifteen minutes, against the face of a spasmodic stricture, at the membranous portion, was required before it yielded. Van Buren and Keyes have evidently had similar experiences, as they note this occasional *persistence* of the spasmodic barrier. Sir Henry Thompson inclines to ignore the existence of the spasmodic stricture, and attributes to ignorance and incapacity the arrest of an instrument in its passage into the bladder, from any cause but an organic one. In this Mr. Erichsen seems quite inclined to agree, although appreciating the possible occurrence of a spasmodic stricture which should be so persistent that it *might* be mistaken for an organic contraction.

"It is not my purpose at this time to discuss the general question of spasmodic stricture. The recent investigations of Stilling (coinciding with those of Kolliker) would seem to show conclusively that the muscular capacity of the urethral surroundings are quite sufficient to account for any amount of contraction which might be observed at any point. In his own strong language (supported by several admirable illustrations of the anatomy of the corpus spongiosum urethræ) he says:* "*the corpus spongiosum is a muscle through which the urethra runs.*" Dr. Stilling so demonstrates the muscular structure of this body that it is at once seen to be an easy matter for such a contraction of the muscular structure of the corpus spongiosum to bring a strong contracting force to bear upon any part of the urethral canal.

A number of clinical cases in illustration are given. The author says in regard to the cases:

"There are several points which coincide with the accepted characteristics of true, deep, organic stricture, and which, if not appreciated, would lead, of necessity, to an erroneous diagnosis, such as was originally made in each one of the cases reported.

"1. *Gradual* diminution of the stream of urine.

"2. *Persistent* frequency of micturition.

"3. *Persistent* resistance to the introduction of *large* instruments *in the hands of skilled surgeons.*

*B. Stilling, *Die rationelle Behandlung der Harnrohren Stricturen.* Erste Abtheilung, p. 9.

"4. Distinct grasping of small instruments, and a *gradual* toleration of instruments of increasing size, and, in this, so *perfectly* simulating the behavior of true organic stricture, that the most skilled and learned surgeons have been deceived by these conditions.

"5. The *persistence*, during a long period of years, of all symptoms which are recognized by authorities, as characteristic of *organic stricture.*

"'The grand distinguishing feature,' says Sir Henry Thompson,* 'which marks the phenomena (of spasmodic strictures), and by which they are contrasted with organic strictures, is their *transitory character.*' So says, in effect, Dr. Erichsen, Dr. Bumstead, Drs. Van Buren and Keyes, Drs. Stilling, Dittel, etc., leading teachers and authorities in such matters.

"Now, if this is *not the fact* (and that it is not the cases cited go to prove), it will be readily seen that those surgeons who differentiate organic from spasmodic strictures by what is claimed to be 'the *distinguishing feature*, viz.: the *transitory character of spasmodic stricture*,' are liable to fall into the grave error of treating a reflex urethral spasm for organic stricture. It is not at all likely that the six cases I have reported, in which this error was made (in *four* cases by *none* who did not fully understand and appreciate *all the points* which Sir Henry Thompson and Mr. Erichsen and others so explicitly lay down for guidance in such cases), I say it is not *likely* that these are *all* the cases in which such errors have occurred, or are likely to occur. They are *types of a class*, and a large one too, which will necessitate the acceptance of *other* means of diagnosis than those now in vogue, before such errors can with certainty be avoided. First of these is the necessary knowledge of the *normal calibre* of the urethra, in which symptoms of stricture are present; second, *the size and condition of the external opening*. If the measurements of these two points do not completely correspond, there is reason to believe that a reflex irritation may be present, which has the power of obscuring diagnosis. If there is a stricture at or near the meatus urinarius, acquired through a previous gonorrhœa, or of congenital origin, contact of urine with the sensitive mucous surface (which is always present behind such stricture), or contact of exploring instruments, is capable of exciting a spasm at the membranous portion of the urethra; a spasm which will often *persist* even when the patient is fully anæsthetized; and will continue up to the time that a *complete* division of the stricture is effected.

"It may, I think, be safely claimed that no reliable examination of the deeper urethra can ever be made while a *stricture*, or even an *erosion*,* is present in the anterior portion of the canal. Inferentially, then, no *treatment* of deep stricture, *per se*, should be attempted until the *complete* freedom from organic contraction of the anterior portions of the urethra is established. A long series of careful observation of the urethral calibre (by the aid of the *urethra-meter*), have conclusively demonstrated a nearly uniform relation between the size of the urethra and that of the penis in which it is located. As I have stated in other papers on this subject, that the circumference of the presenting

* Op. Cit., p. 140.

* Thompson, Op. Cit., p. 132.

penis being three inches, the normal urethral calibre will correspond to 30 or more of the French scale; if three and one-fourth, to 32 or more; if three and one-half, to 34 or more; if three and three-fourths, to 36 or more; if four, to 38 or more; if four and one-fourth, to 40 or *more.*

"When the *urethra-meter* is not available, a urethral calibre based upon these calculations may be implicitly relied upon, as not over estimated; on the contrary, it will often be found one or more millimetres below. Urethral examinations with a *bulbous sound*, corresponding in size to the normal urethral calibre, *alone* can demonstrate complete freedom from stricture in any given case. The presence of the slightest contraction at any point may be accepted as capable of producing reflex irritation, which may result in spasmodic contraction, which shall possess all the recognized characteristics of a deep organic stricture."

RADICAL TREATMENT OF PROSTATIC HYPERTROPHY.—Prof. Heine has cured six cases of prostatic hypertrophy with iodine injections, and now recommends the parenchymatous injection of moderately concentrated solutions of iodide of potassium; he states in *Langenbeck's Archiv*, quoted in the *New York Medical Journal*, that the operation is not severe, and can be borne by old and weak individuals, because the diminution of the hypertrophied organ takes place without suppuration. When its volume is diminished, the secondary affections of the bladder are also relieved, provided they have not attained a high degree. The operation is performed by placing the patient on his side at the edge of the bed, and introducing the oiled index-finger of the left hand into the rectum to the point where it is intended to make the injection. An exploring trocar is then introduced on the finger, the stylet having been withdrawn into the canula, and the puncture is made. The stylet is then withdrawn from the canula, which is filled with the solution in a syringe. When the canula has been filled, an air-tight syringe is attached to the canula, and the injection performed. The median line of the prostate should not be chosen, as a small artery takes its course in this location. The author's solution is: Iodidi potass., ʒ ij.; tr. iodinii, ℥ ij.; aq. destil., ℥ ij.

COMPRESSION OF THE LEFT SUBCLAVIAN ARTERY.—On the 2d inst., Mr. McGill, of Leeds, performed an interesting operation in a case of left subclavian aneurism, by cutting down upon the first part of the left subclavian artery, and compressing it for ten hours and a half by means of torsion forceps. The case had been previously treated with great temporary benefit by galvano-puncture. The details of the previous operations were published in the *Lancet* in 1874, vol. II., p. 9. After numerous galvano-punctures, the patient was able to follow her occupation of mill cook without any discomfort. For many weeks there was very slight pulsation in the aneurism, but gradually the pulsation became more forcible, and further interference was rendered necessary. Up to the time of going to press, the patient was doing well. It may be observed that the first part of the subclavian artery has only been ligatured *once*—namely, by Dr. J. K. Rodgers, of New York, in 1846.—*Lancet*, Jan. 9, 1875.

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